

Appln. No.: 09/486,625
Reply to Office Action of March 10, 2005

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Amendments to the Claims:

Claims 1-2 (Cancelled)

3. (Previously Presented) An isolated nucleic acid molecule comprising a nucleotide sequence encoding an attenuated, non-functional *vif* protein, wherein said nucleotide sequence encodes an Arginine in place of Proline at position 162 of SEQ ID NO:1.

4. (Currently Amended) The nucleic acid molecule of claim 22 3 wherein said nucleic acid molecule comprises a nucleotide sequence which encodes an amino acid sequence of SEQ ID NO:4.

5. (Currently Amended) The nucleic acid molecule of claim 23 3 wherein said nucleic acid molecule comprises a nucleotide sequence of SEQ ID NO:27.

Claim 6. (Cancelled)

7 (Original) A pharmaceutical composition comprising a nucleic acid molecule of claim 3 in a pharmaceutically acceptable carrier or diluent.

8. (Original) A recombinant expression vector comprising a nucleic acid molecule of claim 3.

9. (Currently Amended) The recombinant expression vector of claim 25 8 wherein said nucleic acid molecule comprises a nucleotide sequence which encodes an amino acid sequence of SEQ ID NO:4.

10. (Original) A host cell comprising a recombinant expression vector comprising a nucleic acid molecule of claim 3.

11. (Currently Amended) The host cell of claim 29 8 wherein said nucleic acid molecule comprises a nucleotide sequence which encodes an amino acid sequence of SEQ ID NO:4.

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Claims 12-17 (Cancelled)

18. (Previously Presented) A plasmid comprising a nucleotide sequence encoding an isolated, attenuated, non-functional *vif* protein, wherein said nucleotide sequence encodes an Arginine in place of Proline at position 162 of SEQ ID NO:1.

19. (Currently Amended) The plasmid of claim ~~33~~ 18 wherein said protein comprises an amino acid sequence of SEQ ID NO:4.

20. (Currently Amended) The plasmid of claim ~~34~~ 18 wherein said nucleotide sequence is SEQ ID NO:27.

21. (Currently Amended) A The nucleic acid molecule comprising a nucleotide sequence encoding an attenuated, non-functional *vif* protein, of claim 3 wherein said nucleotide sequence encodes a protein of SEQ ID NO1 comprising one or more modifications selected from the group consisting of: a Tyrosine at a position corresponding to Histidine at position 27 of SEQ ID NO:1; a Glutamic Acid between amino acids at positions corresponding to Arginine at position 36 and Tryptophan at position 37 of SEQ ID NO:1; a Glutamine at a position corresponding to Glutamic Acid Glycine at position 44 of SEQ ID NO:1; a Glutamic Acid at a position corresponding to Histidine at position 59 of SEQ ID NO:1; a Threonine between amino acids at positions corresponding to Histidine at position 72 and Glycine at position 73 of SEQ ID NO:1; a Histidine at a position corresponding to Tyrosine at position 125 of SEQ ID NO:1; an Arginine at a position corresponding to Glutamine at position 134 of SEQ ID NO:1; a Serine at a position corresponding to Asparagine at position 138 of SEQ ID NO:1; and an Isoleucine at a position corresponding to Leucine at position 148 of SEQ ID NO:1.

22. (Currently Amended) A The nucleic acid molecule comprising a nucleotide sequence encoding an attenuated, non-functional *vif* protein, of claim 3 wherein said nucleic acid molecule comprises a nucleotide sequence which encodes an amino acid sequence selected from the group consisting of SEQ ID NO:4, SEQ ID NO:9, and SEQ ID NO:10.

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23. (Currently Amended) A The nucleic acid molecule comprising a nucleotide sequence encoding an attenuated, non-functional vif protein, of claim 3 wherein said nucleic acid molecule comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:27, SEQ ID NO:32, and SEQ ID NO:33.

24. (Currently Amended) A The recombinant expression vector comprising a nucleotide sequence encoding an attenuated, non-functional vif protein of claim 21, & wherein said nucleotide sequence encodes: a Tyrosine at a position corresponding to Histidine at position 27 of SEQ ID NO:1; a Glutamic Acid between amino acids at positions corresponding to Arginine at position 36 and Tryptophan at position 37 of SEQ ID NO:1; a Glutamine at a position corresponding to Glycine at position 44 of SEQ ID NO:1; a Glutamic Acid at a position corresponding to Histidine at position 59 of SEQ ID NO:1; a Threonine between amino acids at positions corresponding to Histidine at position 72 and Glycine at position 73 of SEQ ID NO:1; a Histidine at a position corresponding to Tyrosine at position 125 of SEQ ID NO:1; an Arginine at a position corresponding to Glutamine at position 134 of SEQ ID NO:1; a Serine at a position corresponding to Asparagine at position 138 of SEQ ID NO:1; and an Isoleucine at a position corresponding to Leucine at position 148 of SEQ ID NO:1.

25. (Currently Amended) A The recombinant expression vector comprising a nucleic acid molecule of claim 22, & wherein said nucleic acid molecule comprises a nucleotide sequence which encodes an amino acid sequence selected from the group consisting of SEQ ID NO:4, SEQ ID NO:9, and SEQ ID NO:10.

26. (Currently Amended) The recombinant expression vector of claim 27 & wherein said nucleic acid molecule comprises SEQ ID NO:27.

27. (Currently Amended) A The recombinant expression vector comprising a nucleic acid molecule of claim 23, & wherein said nucleic acid molecule comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:27, SEQ ID NO:32, and SEQ ID NO:33.

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28. (Currently Amended) The host cell comprising a recombinant expression vector of claim 21, ~~10 wherein said nucleotide sequence encodes: a Tyrosine at a position corresponding to Histidine at position 27 of SEQ ID NO:1; a Glutamic Acid between amino acids at positions corresponding to Arginine at position 36 and Tryptophan at position 37 of SEQ ID NO:1; a Glutamine at a position corresponding to Glycine at position 44 of SEQ ID NO:1; a Glutamic Acid at a position corresponding to Histidine at position 59 of SEQ ID NO:1; a Threonine between amino acids at positions corresponding to Histidine at position 72 and Glycine at position 73 of SEQ ID NO:1; a Histidine at a position corresponding to Tyrosine at position 125 of SEQ ID NO:1; an Arginine at a position corresponding to Glutamine at position 134 of SEQ ID NO:1; a Serine at a position corresponding to Asparagine at position 138 of SEQ ID NO:1; and an Isoleucine at a position corresponding to Leucine at position 148 of SEQ ID NO:1.~~

29. (Currently Amended) A The host cell comprising a nucleic acid molecule of claim 22, ~~10 wherein said nucleic acid molecule comprises a nucleotide sequence which encodes an amino acid sequence selected from the group consisting of SEQ ID NO:4, SEQ ID NO:9, and SEQ ID NO:10.~~

30. (Currently Amended) The host cell of claim 31 ~~10~~ wherein said nucleic acid molecule comprises SEQ ID NO:27.

31. (Currently Amended) A The host cell comprising a nucleic acid molecule of claim 23, ~~10 wherein said nucleic acid molecule comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:27, SEQ ID NO:32, and SEQ ID NO:33.~~

32. (Currently Amended) A The plasmid comprising a nucleotide sequence encoding an isolated, attenuated, non-functional *vif* protein, wherein said nucleotide sequence encodes, of claim 18 wherein said nucleotide sequence encodes a protein of SEQ ID NO1 comprising one or more modifications selected from the group consisting of: a Tyrosine at a position corresponding to Histidine at position 27 of SEQ ID NO:1; a Glutamic Acid between amino acids at positions corresponding to Arginine at

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position 36 and Tryptophan at position 37 of SEQ ID NO:1; a Glutamine at a position corresponding to Glutamic Acid ~~Glycine~~ at position 44 of SEQ ID NO:1; a Glutamic Acid at a position corresponding to Histidine at position 59 of SEQ ID NO:1; a Threonine between amino acids at positions corresponding to Histidine at position 72 and Glycine at position 73 of SEQ ID NO:1; a Histidine at a position corresponding to Tyrosine at position 125 of SEQ ID NO:1; an Arginine at a position corresponding to Glutamine at position 134 of SEQ ID NO:1; a Serine at a position corresponding to Asparagine at position 138 of SEQ ID NO:1; and an Isoleucine at a position corresponding to Leucine at position 148 of SEQ ID NO:1.

33. (Currently Amended) A The plasmid of claim 18 comprising a nucleotide sequence encoding an isolated, attenuated, non-functional v/f protein, wherein said protein comprises an amino acid sequence selected from the group consisting of SEQ ID NO:4, SEQ ID NO:9, and SEQ ID NO:10.

34. (Currently Amended) A The plasmid comprising a nucleotide sequence encoding an isolated, attenuated, non-functional v/f protein, of claim 18 wherein said nucleotide sequence is selected from the group consisting of SEQ ID NO:27, SEQ ID NO:32, and SEQ ID NO:33.